



# SERVICE MANUAL VOCODER VC-10

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# 1. SPECIFICATIONS

## < Controls >

1. Keyboard
  - 32 keys F ~ C
  - Octave range: normal 16'
  - up 8'
  - Tuning  $\pm 100$  cents
  - Accent bend
  - Vibrato speed (1 Hz ~ 10 Hz)
  - Vibrato depth (0 ~ 100 cent P-P)
  - External pitch control
  - Pitch control wheel ( $\pm \frac{1}{2}$  octave)
2. Signal mixers
  - Input signal balance (keyboard/noise)
  - External signal level
3. Frequency response simulator
  - Microphone level
4. Meter
  - VU meter
5. Final controls
  - Ensemble
  - Power switch/final volume
  - Output balance (simulator/mike)
  - Headphone level

## < Inputs >

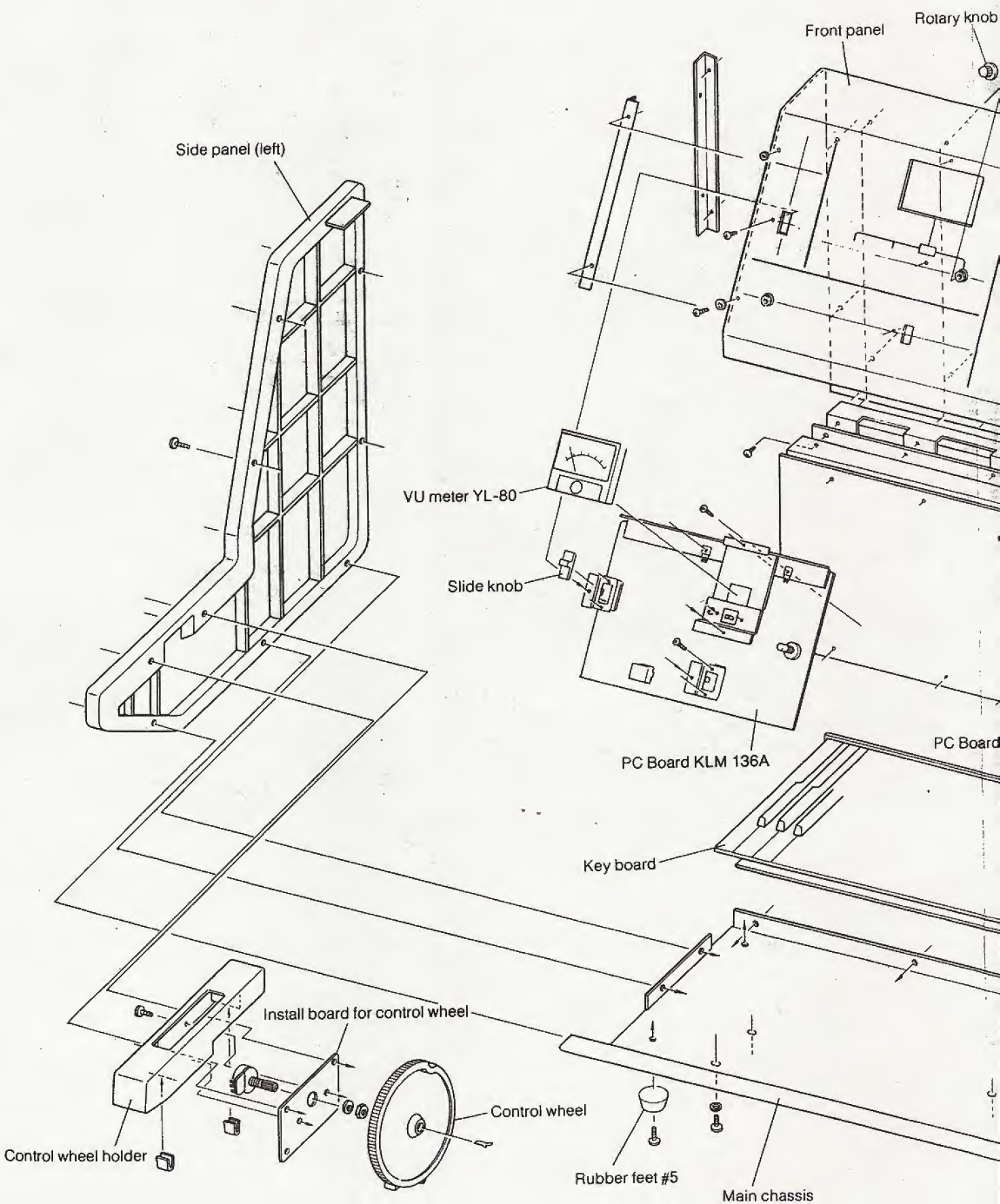
1. Mike inputs
  - BTS connector input } 50 ~ 100
  - 2P phone jack input
2. Signal inputs
  - Signal input 3V p-p MAX
  - Pitch control input (1/3-oct/vol)
  - 3V ~ 3V

## < Outputs >

1. Final
    - Final out - 10dB (output impedance 3K $\Omega$ )
  2. Headphone
    - Headphone out 8 $\Omega$  120mW
- Power consumption 25W  
 Dimensions 499(W) x 309(D) x 249(H) mm  
 Weight 7kg



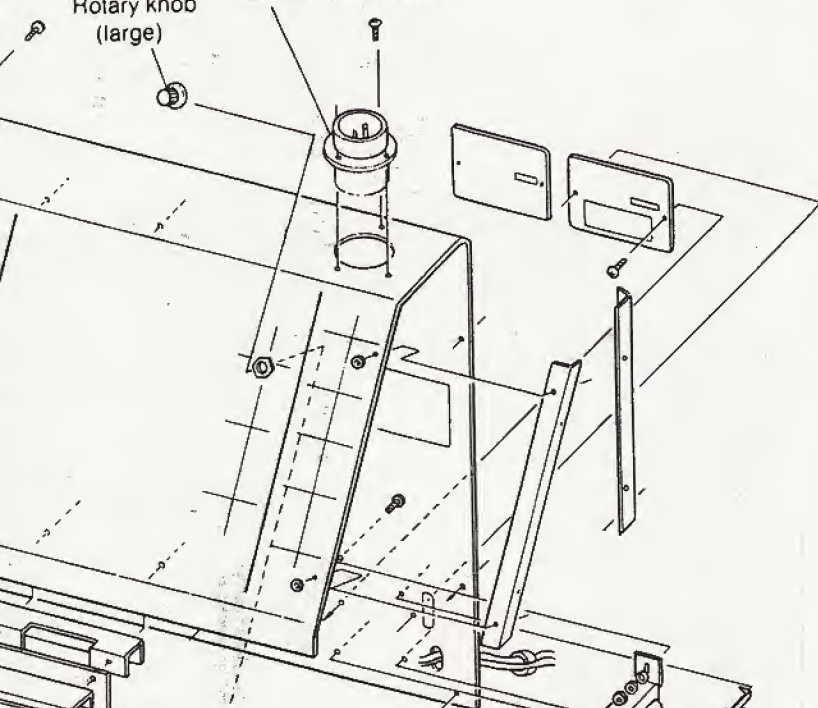
## 2. STRUCTURAL DIAGRAM



(small)

Rotary knob  
(large)

3P BTS Connector



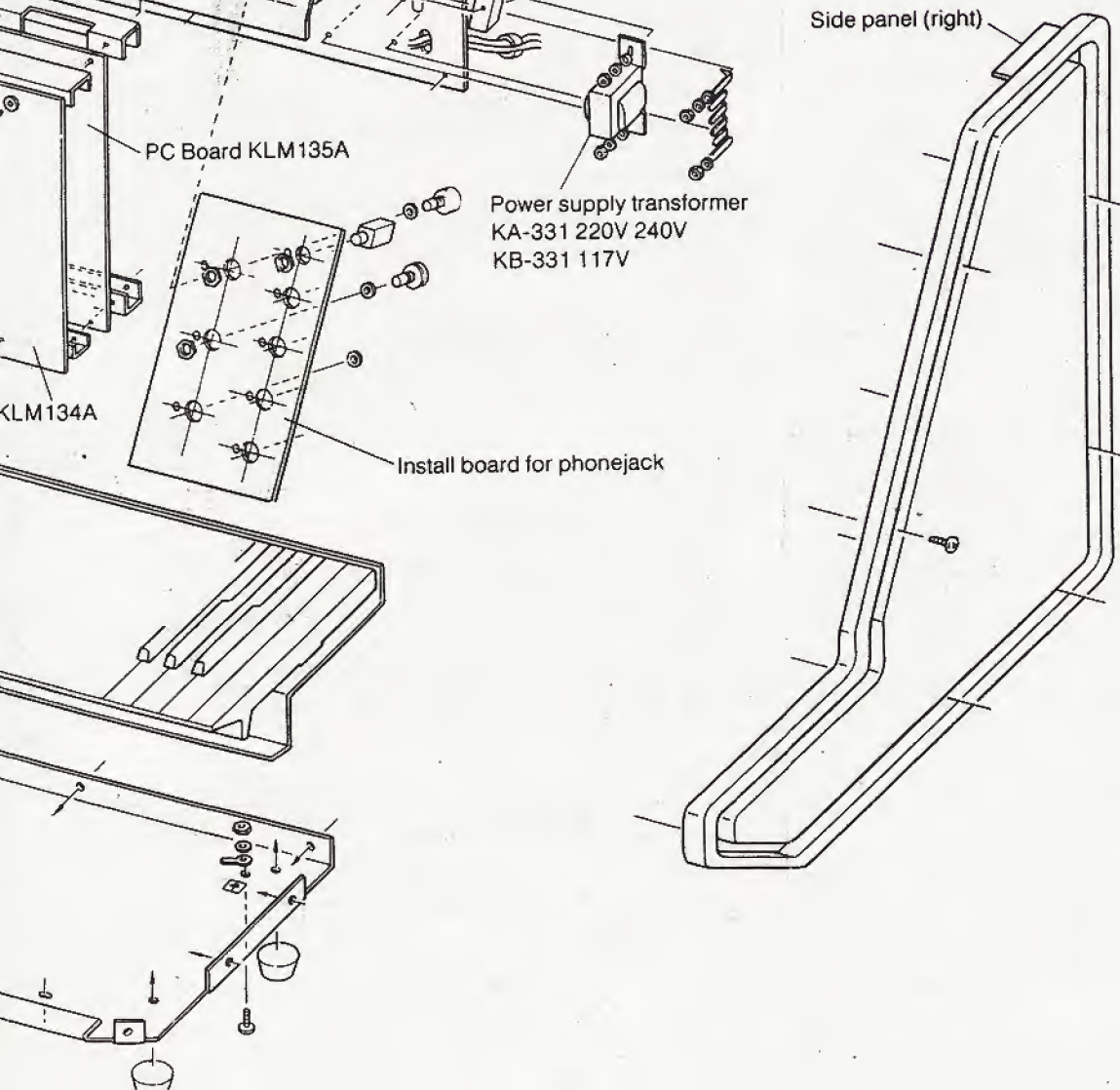
PC Board KLM135A

Power supply transformer  
KA-331 220V 240V  
KB-331 117V

KLM134A

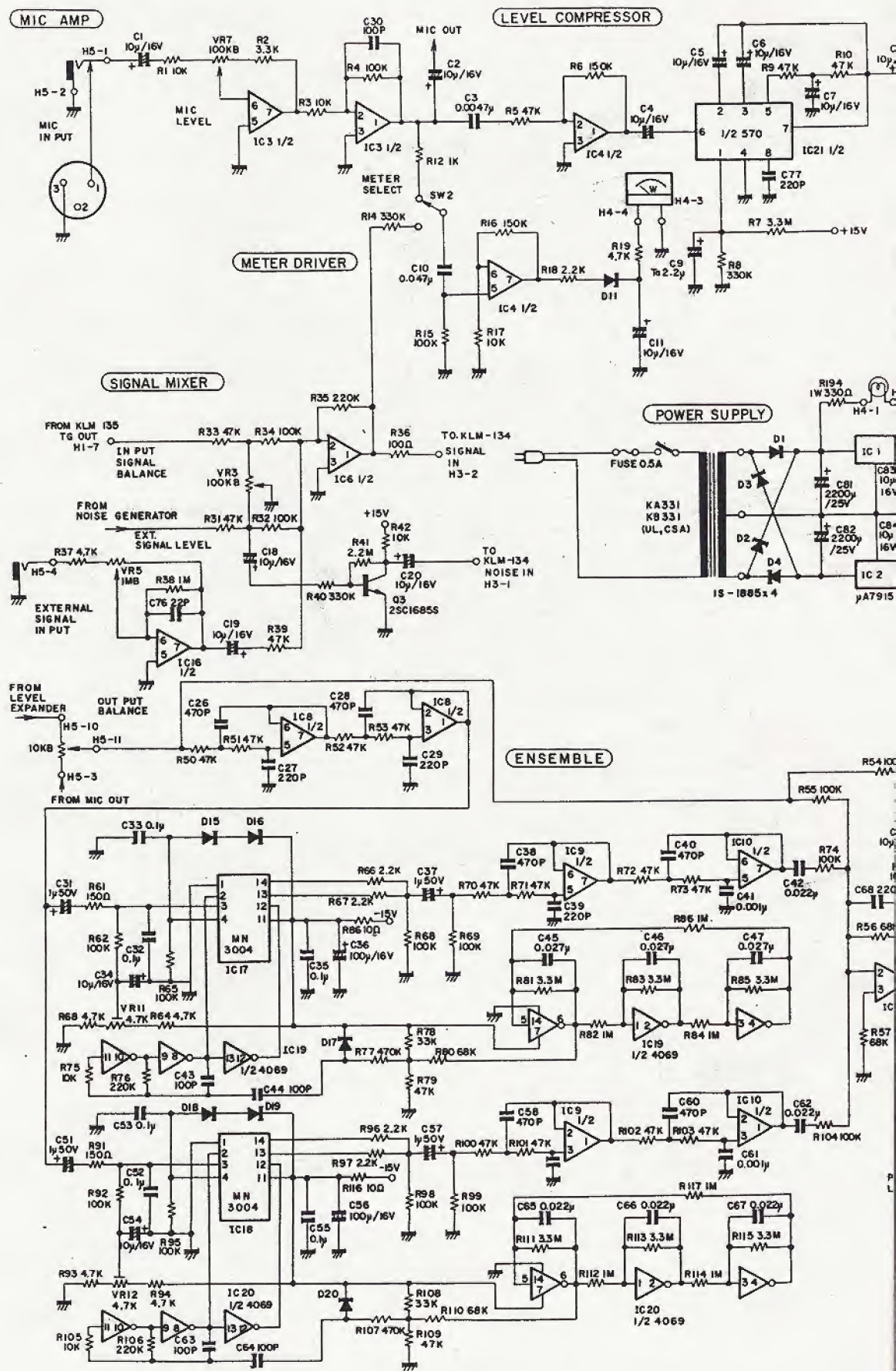
Install board for phonejack

Side panel (right)





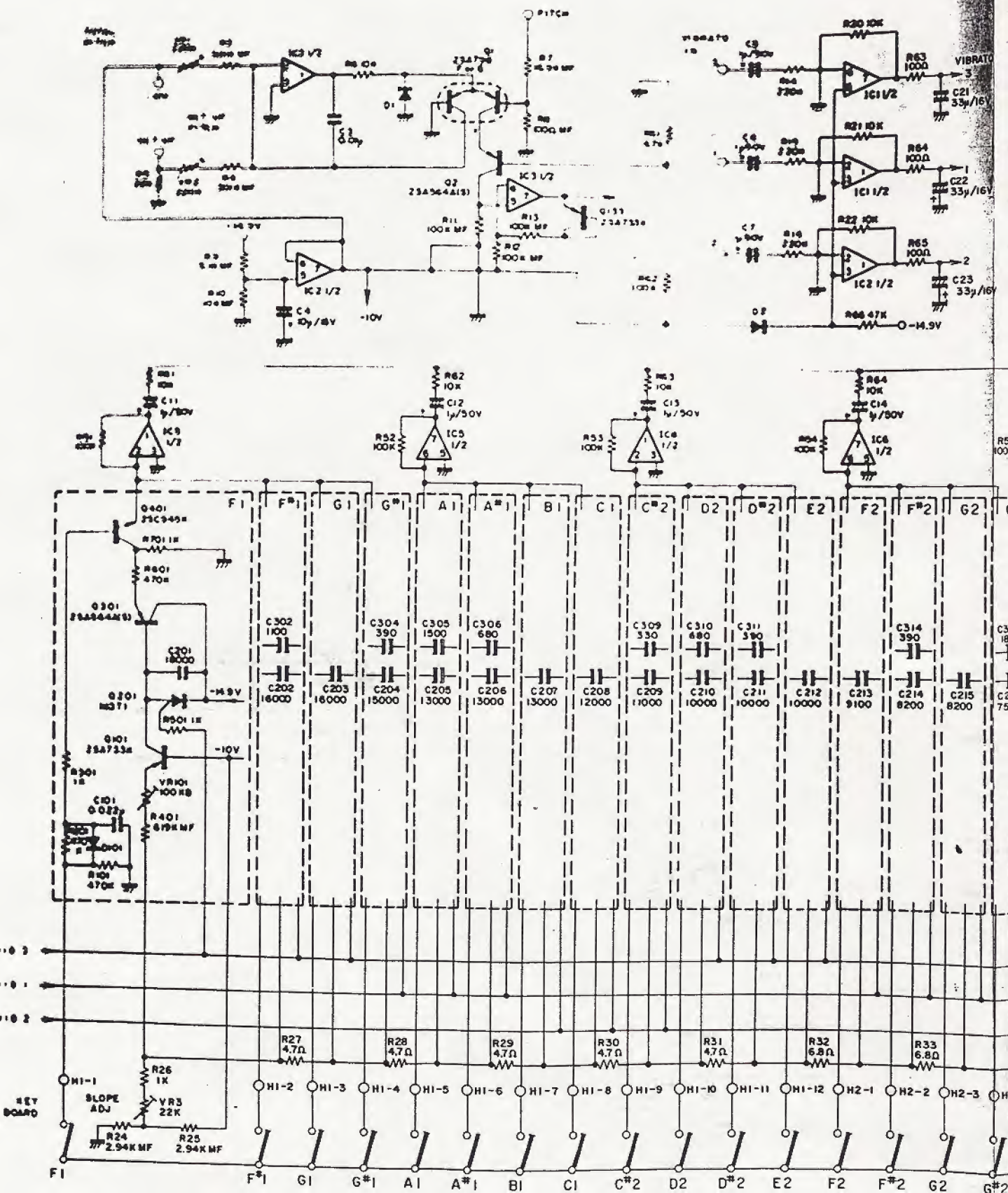
# 3. CIRCUIT DIAGRAM KLM-136

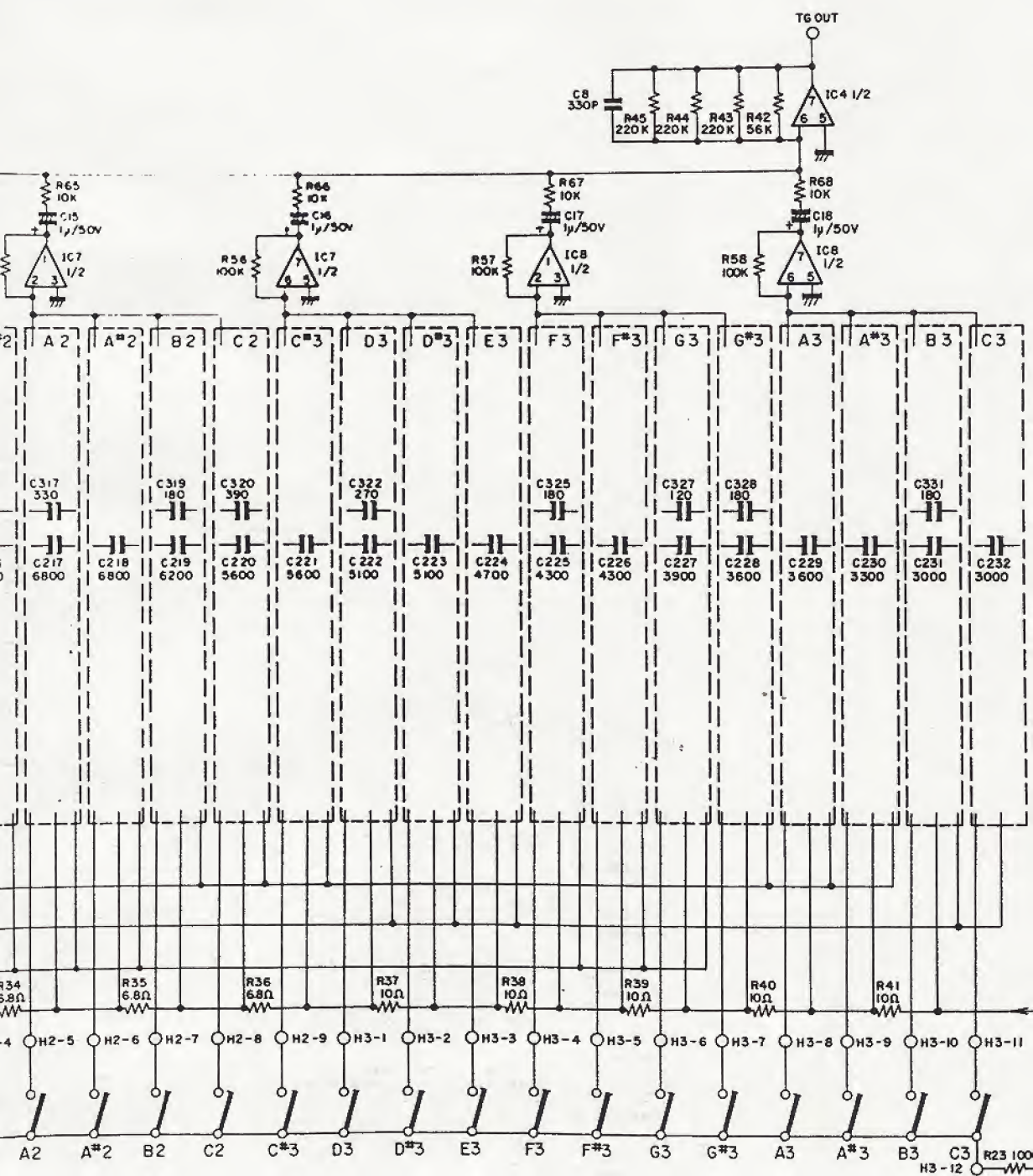
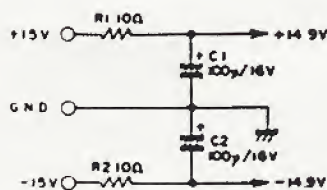




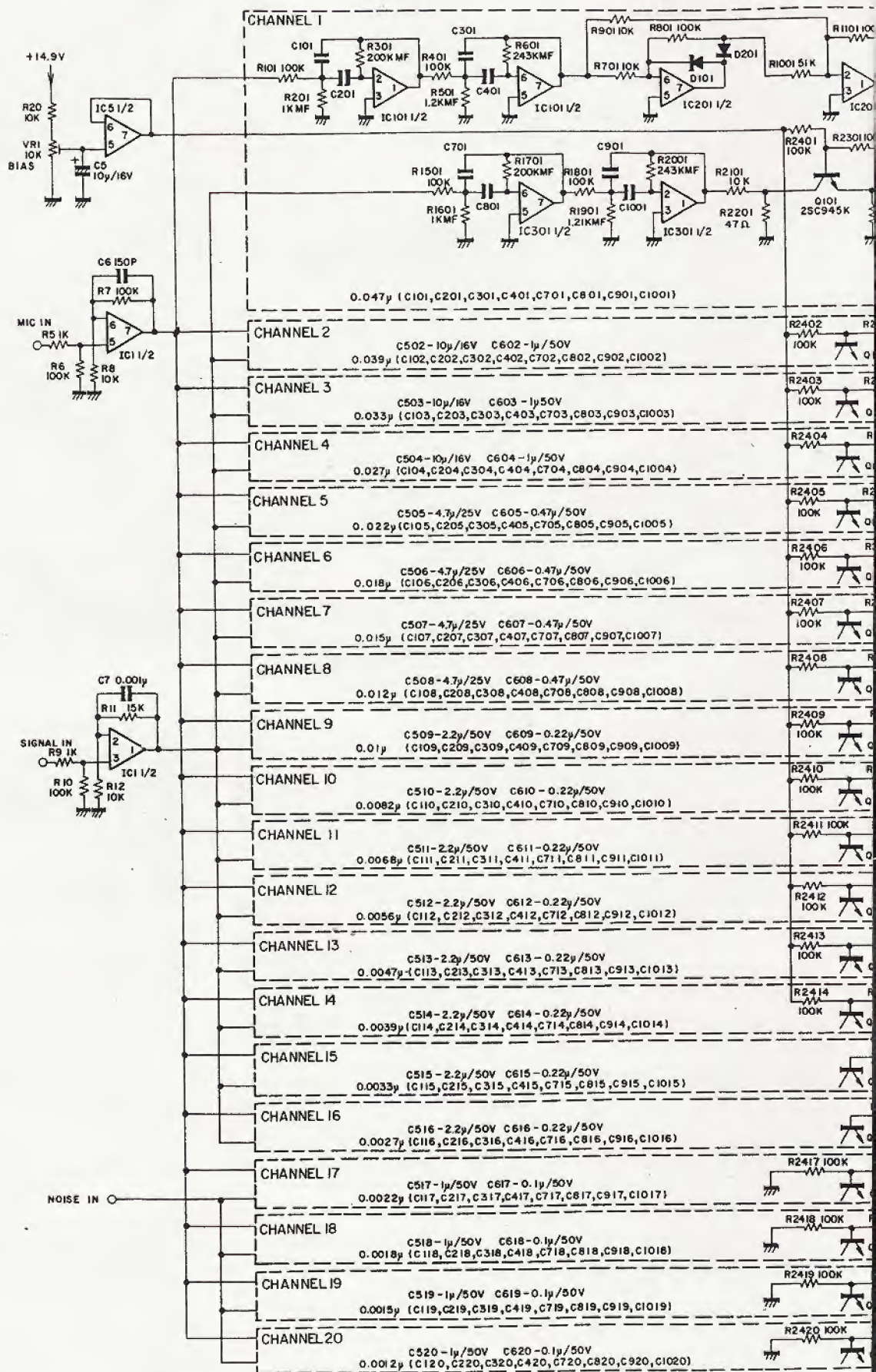


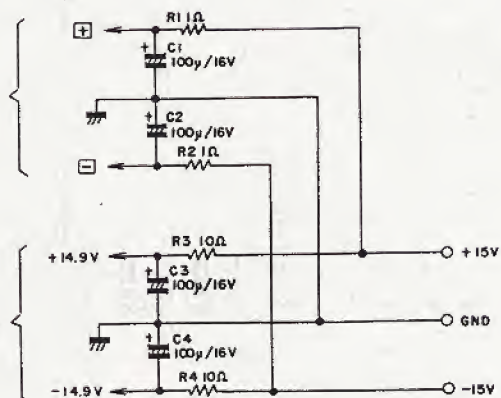
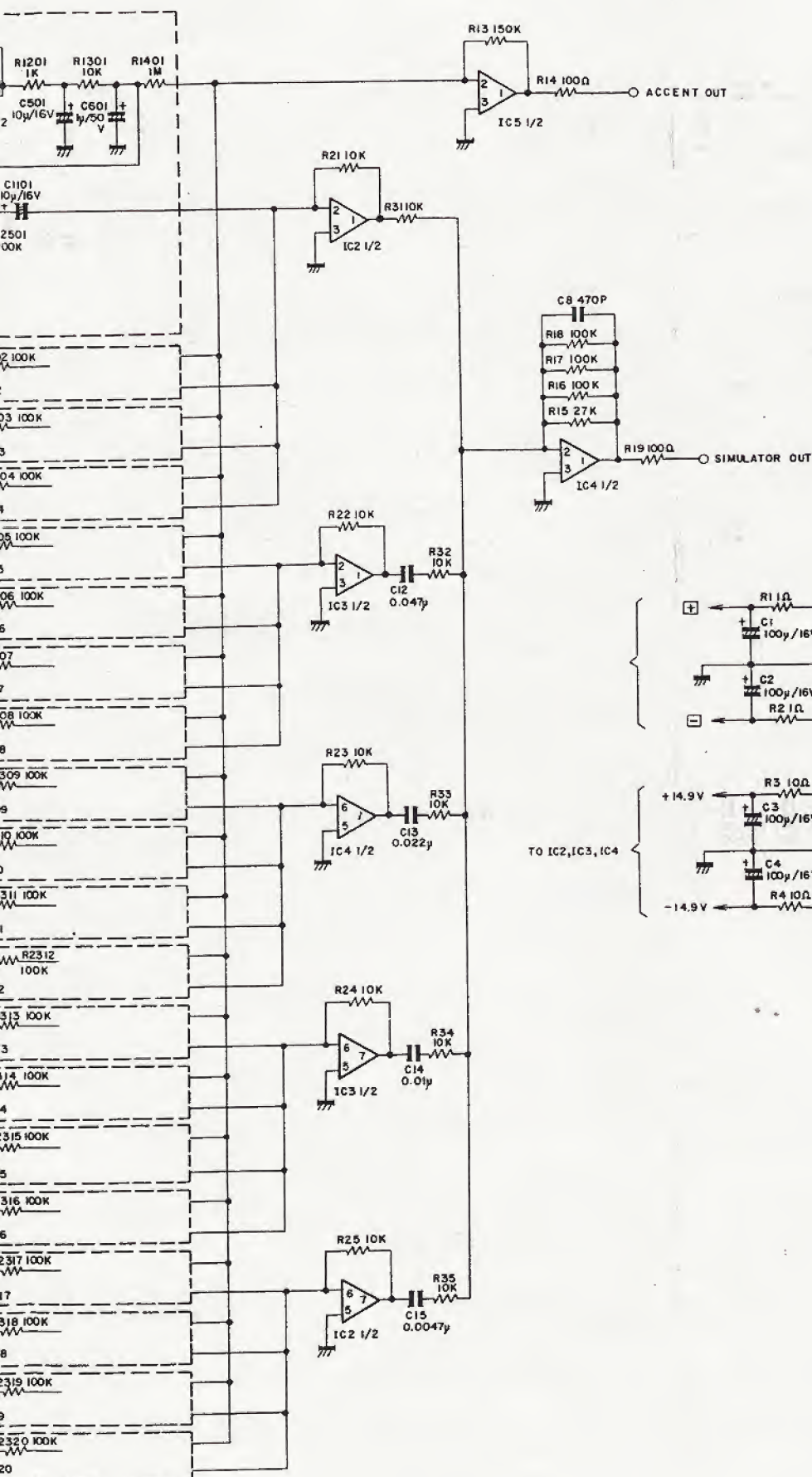
# KLM-135



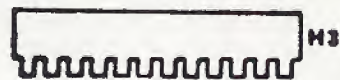
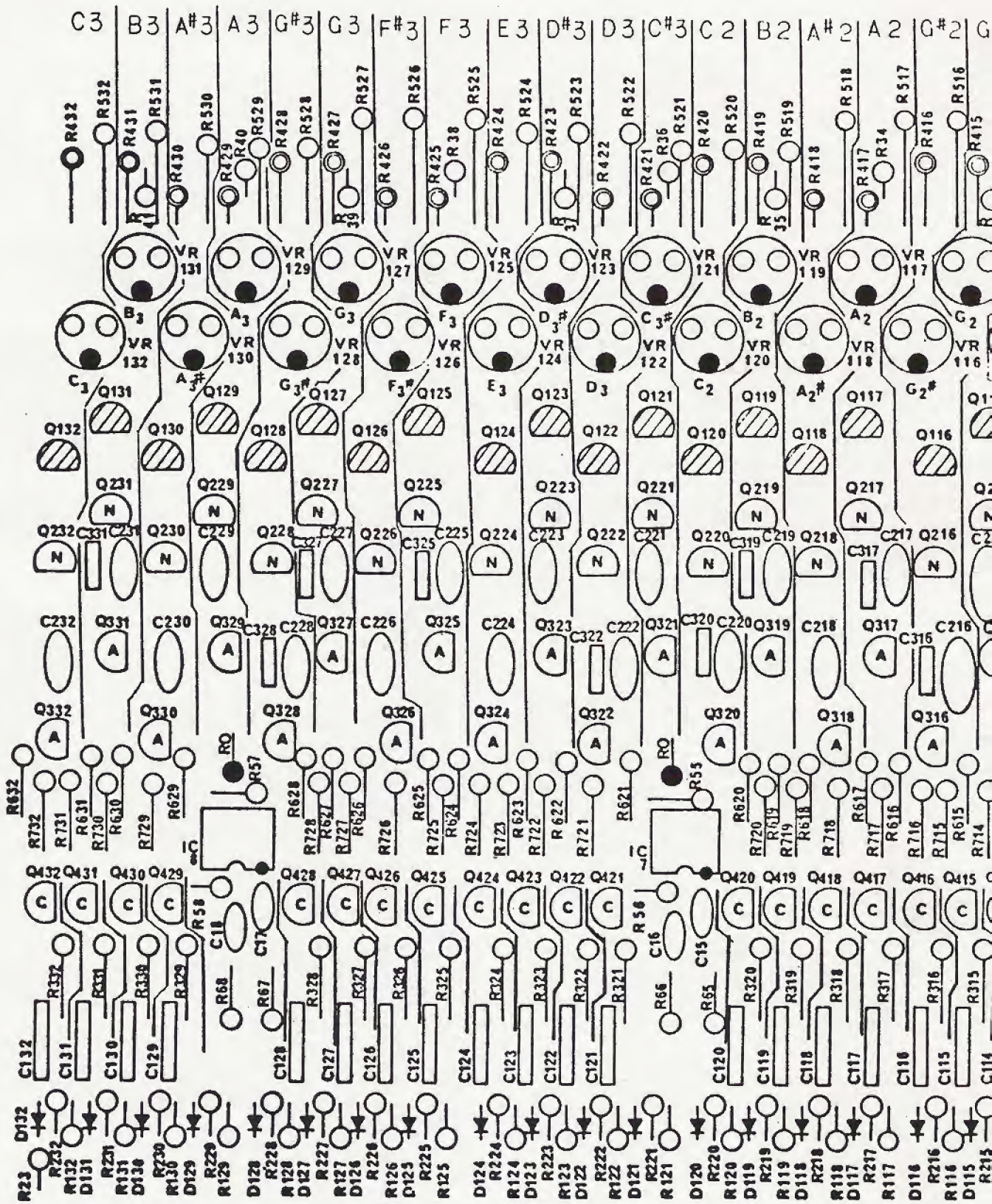




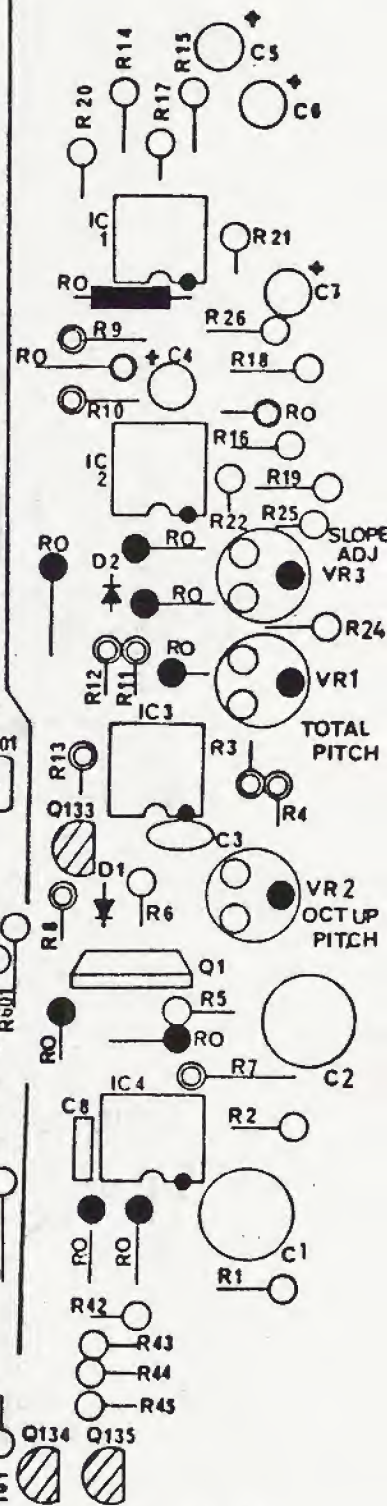
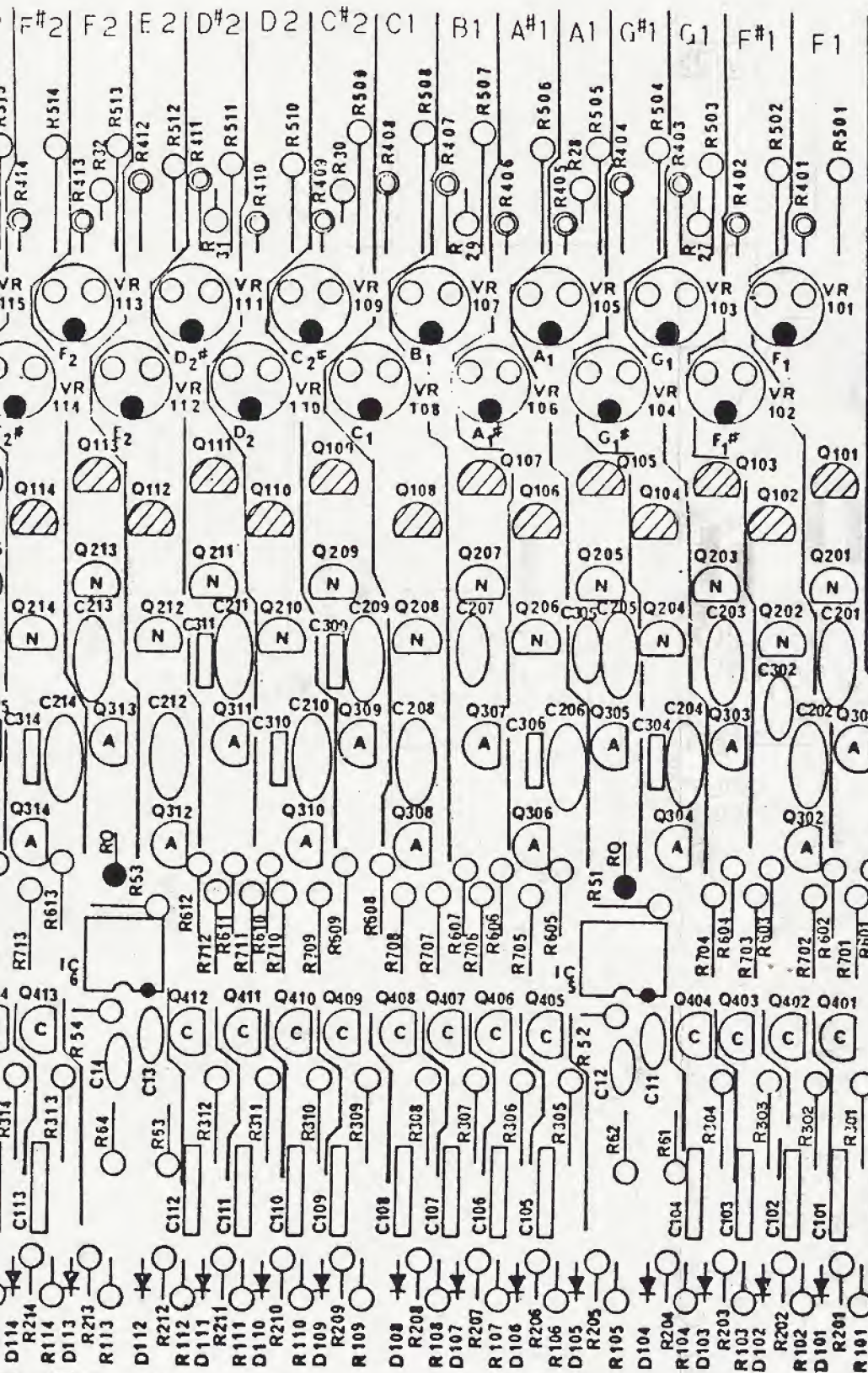








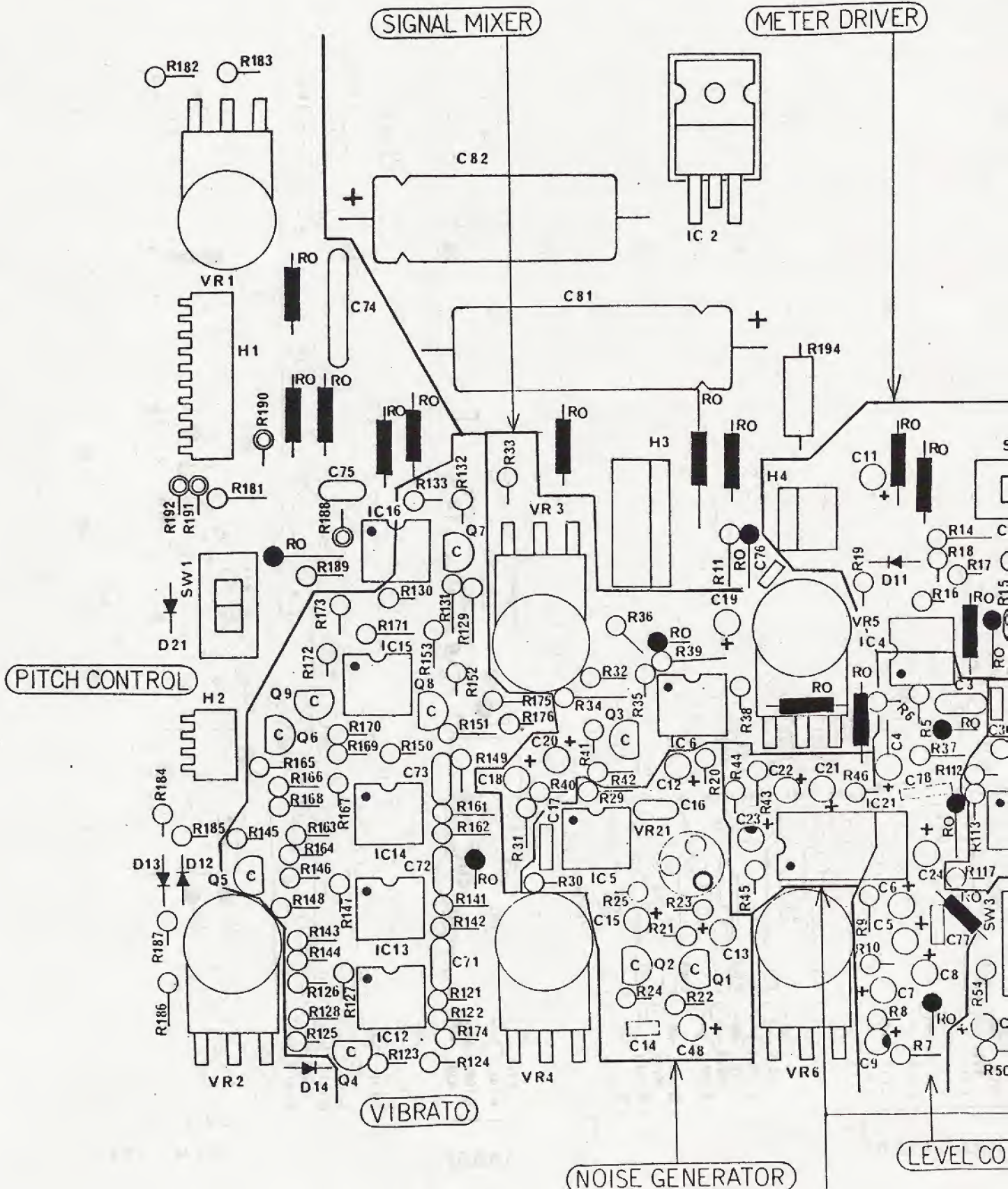




KORG VC-10  
KLM-1358



4. PC BOARD KLM-136





MIC AMP

KORG  
VC-10  
KLM-1360

POWER SUPPLY

1/2

IC2

IC3

IC4

IC5

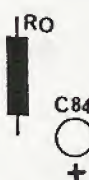
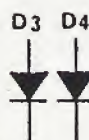
IC6

IC7

IC8

IC9

IC10



C34

R63

R62

IC17

R64

R67

R68

R69

R99

C57

C54

R93

R94

C56

C55

VR12

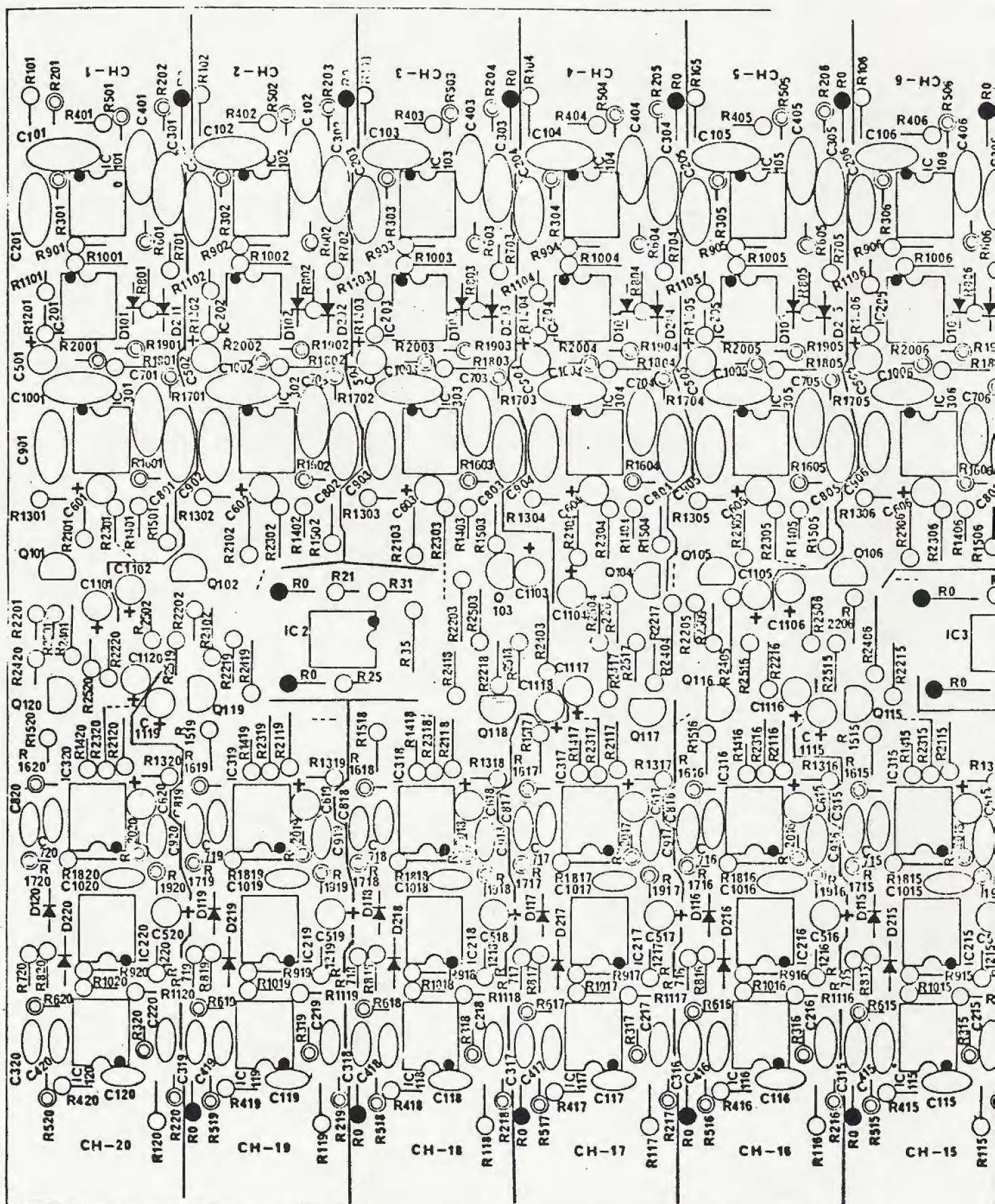
+

PRESSOR

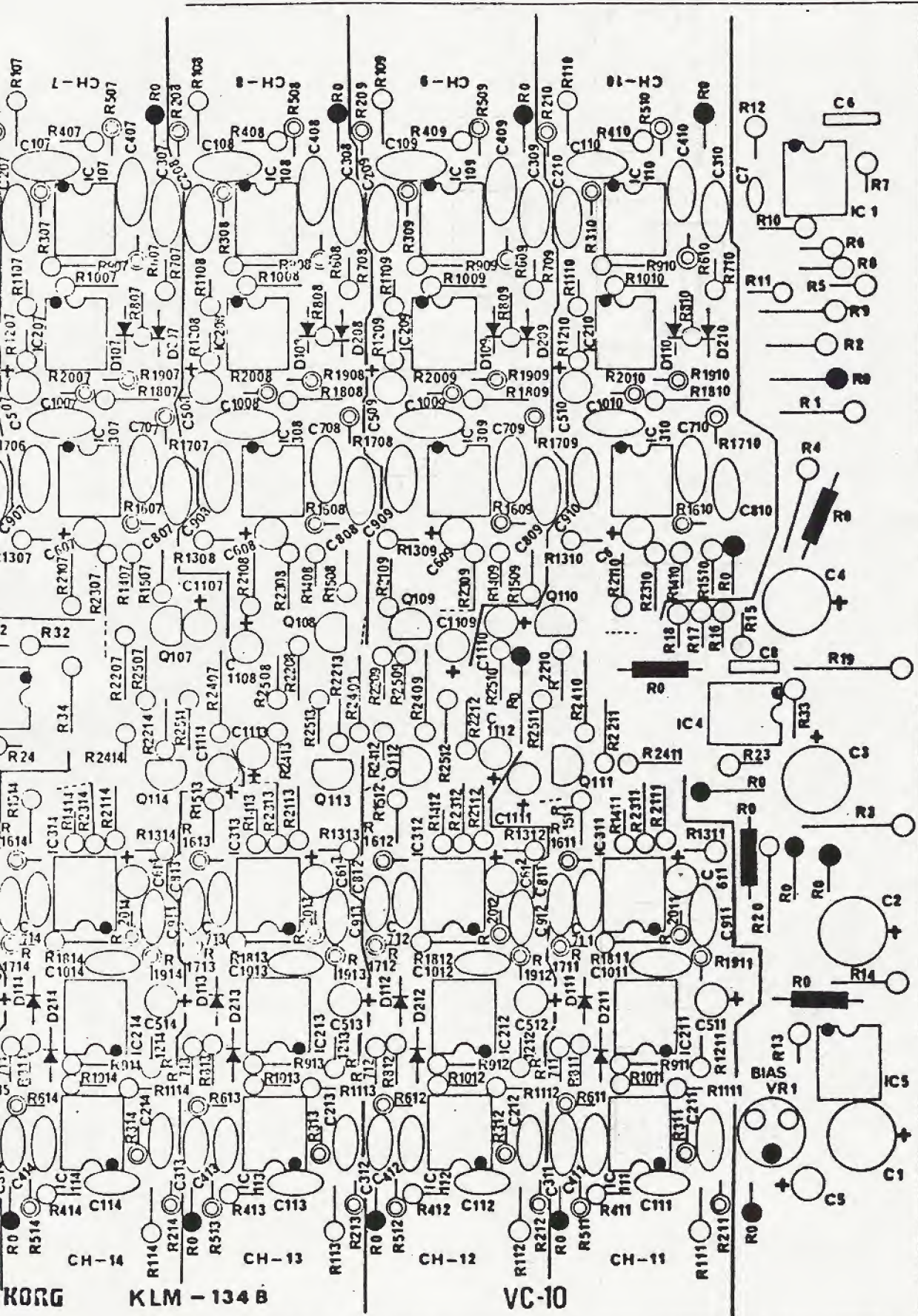
PHONE AMP

ENSEMBLE



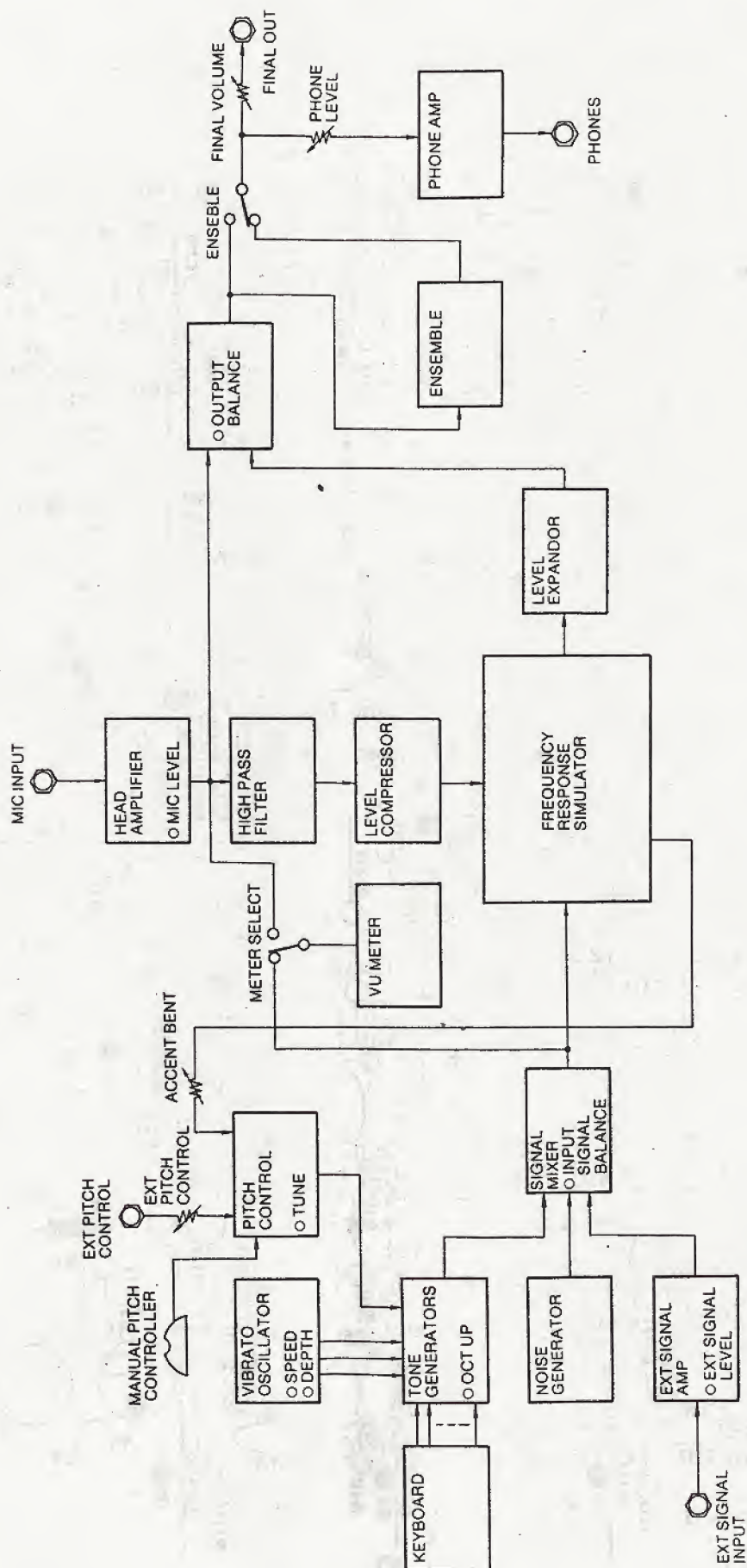








## 5. BLOCK DIAGRAM



# 6. PARTS LIST

(Mechanical parts not listed)

## ●CARBON RESISTORS

not listed

## ●METAL FILM RESISTORS

1/4W 1% 100Ω x 1  
 1/4W 1% 1kΩ x 40  
 1/4W 1% 1.21KΩ x 40  
 1/4W 1% 4.03KΩ x 1  
 1/4W 1% 5.1KΩ x 1  
 1/4W 1% 10KΩ x 1  
 1/4W 1% 16.9KΩ x 1  
 1/4W 1% 29.4KΩ x 11  
 1/4W 1% 100KΩ x 3  
 1/4W 1% 162KΩ x 1  
 1/4W 1% 200KΩ x 40  
 1/4W 1% 243KΩ x 40  
 1/4W 1% 301KΩ x 1  
 1/4W 1% 402KΩ x 2  
 1/4W 1% 619KΩ x 32  
 1W 1% 330Ω x 32

## ●MYLAR CAPACITORS

50V - 0.001μF x 4  
 50V - 0.0022μF x 1  
 50V - 0.01μF x 1  
 50V - 0.022μF x 6  
 50V - 0.27μF x 4  
 50V - 0.33μF x 4  
 50V - 0.39μF x 1  
 50V - 0.47μF x 3  
 50V - 0.56μF x 1  
 50V - 0.68μF x 1  
 50V - 0.082μF x 1

## ●CERAMIC CAPACITORS

50V - 22pF x 1  
 50V - 47pF x 1  
 50V - 100pF x 6  
 50V - 120pF x 1  
 50V - 150pF x 1  
 50V - 180pF x 5  
 50V - 220pF x 7  
 50V - 270pF x 1  
 50V - 330pF x 3  
 50V - 390pF x 4  
 50V - 470pF x 7  
 50V - 680pF x 2

## ●TANTALUM CAPACITORS

16V 2.2μF x 2

## ●ELECTROLYTIC CAPACITORS

16V - 10μF x 64  
 16V - 100μF x 8  
 50V - 1.0μF x 29  
 25V - 2200μF x 2

## ●POLYPROPYLENE CAPACITORS

100V - 0.0011μF x 1  
 100V - 0.0012μF x 8  
 100V - 0.0015μF x 9  
 100V - 0.0018μF x 8  
 100V - 0.0022μF x 8  
 100V - 0.0027μF x 8  
 100V - 0.0030μF x 2  
 100V - 0.0033μF x 9  
 100V - 0.0036μF x 2  
 100V - 0.0039μF x 9  
 100V - 0.0043μF x 2  
 100V - 0.0047μF x 9  
 100V - 0.0051μF x 2  
 100V - 0.0056μF x 10  
 100V - 0.0062μF x 1  
 100V - 0.0068μF x 10  
 100V - 0.0075μF x 1  
 100V - 0.0082μF x 10  
 100V - 0.0091μF x 1  
 100V - 0.0001μF x 11  
 100V - 0.0011μF x 1  
 100V - 0.012μF x 9  
 100V - 0.013μF x 3  
 100V - 0.015μF x 9  
 100V - 0.016μF x 2  
 100V - 0.018μF x 9  
 100V - 0.022μF x 8  
 100V - 0.027μF x 8  
 100V - 0.033μF x 8  
 100V - 0.039μF x 8  
 100V - 0.047μF x 8  
 100V - 0.33μF x 1

## ●TRANSISTORS

2SA-798G x 1  
 2SA-564AS x 32  
 2SC-1685S x 5  
 (special selected)  
 2SA-733K x 35  
 2SC-945LK x 55  
 2SC-644R x 1

## ●DIODES

1S-1555 x 85  
 1S-1885 x 4

## ●IC

N13T-1 x 32  
 MN-3004 x 2  
 μPC-4558 x 87  
 μPC-14315 x 1  
 μA-7915 x 1  
 MC-14069 x 2  
 NE-570 x 1

## ●SEMI-FIXED RESISTORS

SR29R 4.7KΩB x 2  
 SR19R 100KΩB x 33  
 SR19R 100KΩB x 1  
 SR19R 47KΩB x 1  
 SR19R 220KΩB x 2

## ●ROTARY VARIABLE RESISTORS

EVH-5LA802B15 x 4  
 EVH-5LA802B14 x 1  
 EVH-5LA802A15 x 2  
 EVH-5LA802B16 x 1  
 EVC-BQ5P18B14 x 1  
 EVH-OFA-803B14 x 1  
 EVH-OFA-803B15 x 1  
 EVH-RTAP20B15 x 1  
 (Center click-stop)

## ●SLIDE SWITCH

SSB-12208 x 3

## ●KEY

F-c 32key



## ●PHONE JACK

2P (RC-707) x 3  
 3P (ST) x 1

## ●FUSE

250V-0.1A x 1

## ●CONNECTORS

 BE4P-SHF-1 x 1  
 BE8P-SHF-1 x 1  
 BE11P-SHF-1 x 1  
 BS9P-SHF-1 x 1  
 BS12P-SHF-1 x 2  
 BS10P-SHF-1 x 1  
 BS4P-SHF-1 x 1  
 Female Connectors  
 MLR-3 RRC-1 x 1  
 4PVC-1001 x 1  
 4PVC-1002 x 1  
 8PVC-1003 x 1  
 9P x 1  
 10P x 1  
 11P x 1  
 12P x 1  
 MLP-03 TRC-220 x 1



# 7. CHECK AND ADJUSTMENT

(refer to figures 1 and 2)

## \*Setup for testing.

- Connect VC-10 FINAL OUT to WT-10 (Korg Tuning Standard) input jack.
- Connect microphone (audio signal) to VC-10 MIC INPUT.

### 7-1 TOTAL PITCH Adjustment.

- Set TUNE knob to center.
- Set OCTAVE switch to down position.
- Play A-2 (on keyboard) and adjust VR1 so that the WT-10A indicates the correct pitch.
- Adjust each of the trimmer screws from F-1 to C-3 to the correct pitch as indicated on the WT-10 A meter.

### 7-2 OCT UP PITCH Adjustment.

- Set OCTAVE switch to UP position.
- Play F-3 (on keyboard) and adjust trimmer screw VR-2 as necessary, so that the pitch is one octave higher than before.

### 7-3 SLOPE ADJUST Adjustment.

- Play F-1 and adjust VR-3 so that the pitch is one octave higher than before.

(Repeat adjustments 7-2 and 7-3 as many times as needed, so that all keys stay in tune at both OCTAVE switch positions.)

### 7-4 BIAS Adjustment.

- Disconnect microphone from MIC INPUT.
- Disconnect WT-10A, and connect FINAL OUT to amplifier.
- Play each of the keys on the keyboard and adjust VR-4 just as much as necessary so that no sound will be produced. Do not turn VR-4 further (clockwise) than the point where the sound first stops. If turned too far, sensitivity to a microphone input signal will be too low.

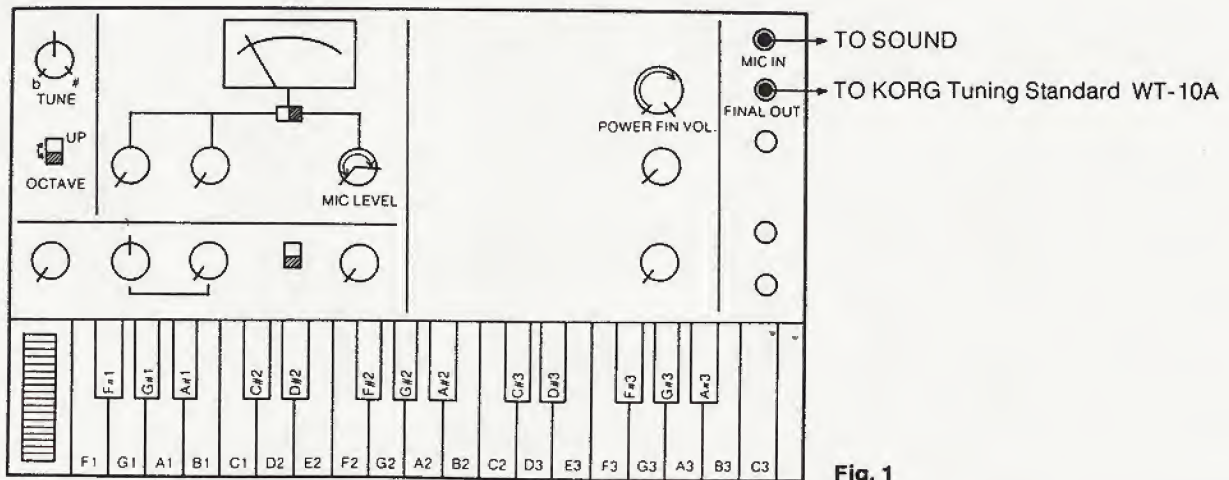


Fig. 1

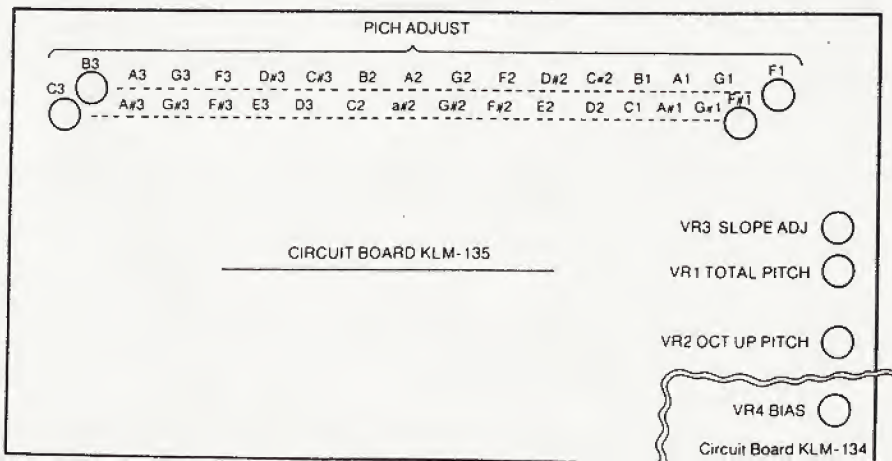


Fig. 2

Circuit Board KLM-134